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OF

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GOLD STREAMING OPERATIONS

ON THE

RIVER DU LOUP,

IN THE

SEIGNIORY OF AUBERT DE L'ISLE, BEAUCE,

CANADA EAST,

IN 1851 AND 1852.

MONTREAL :

PRINTED BY JOHN LOVELL, ST. NICHOLAS STREET.

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REPORT.

MONTREAL, 19th January, 1853.

JAMES LOGAN, Esq.

SIR,—Although the presence of gold in the drift of Canada has been known for a considerable time, it is only lately that attempts have been made to ascertain whether the quantity in any locality is sufficient to promise a profitable return. The great area over which the auriferous deposit in the Province is now known to extend, makes it reasonable to suppose that the quantity may be so in many places; but to one of these in particular it is, that on the present occasion, I am to confine attention, streaming for gold on it having been prosecuted for the last two years under my superintendence.

Indications of an encouraging nature having been met with on the Fief St. Charles in the Seigniory of Aubert de l'Isle, an application was made to the Provincial Government for permission to collect the precious metal on a strip of about five miles on the Rivers du Loup and Chaudière at their junction, an arrangement having in the first instance been made with one of the *censitaires* on whose lots the indications were obtained. License to commence mining the ground was obtained from the Government on the 26th April, 1851, on the conditions of which a copy is hereto appended, and the area to be worked having been fixed as five miles and fifteen chains on the Rivers by a breadth of a quarter of a mile on each side, streaming operations were begun towards the end of May.

The system adopted for obtaining the gold was that practised in Cornwall in streaming for tin. By this a fall of water is required, and a small stream called Creig's Creek, near the position where the first indications were met with, was considered available for the purpose. Immediately that the water

was applied to a sufficient quantity of gravel in a *streak*, a number of large and small pieces of gold were obtained, and it was soon perceived that the distribution of the metal in the part experimented upon was pretty uniform and the quantity sufficient to encourage farther perseverance.

The streaming, however, had not been continued many days before it was perceived that the water in the creek diminished very much, and it so far dried up that only one streak and one tye could be kept in operation. Although the experimental facts ascertained by these were sufficient to authorise the opinion, that provided the rest of the location were like this part, there was gold enough on it to render the enterprise of mining it profitable, it was very evident that success would depend on obtaining water from some other source in sufficient quantity to work a much larger number of streaks and tyes.

As the summer advanced the dry weather continued, and the water in the creek failing altogether, streaming had to be suspended. Advantage, however, was taken of the time to extend exploration to other parts of the location in order to ascertain more fully the distribution of the gold over it. The result of this was so far satisfactory that wherever a trial was made, such indications were obtained as to authorise the opinion that it is about equally abundant throughout, not only in the beds of the main streams but in parts extending up to ten feet above their level, and particularly in a flat of about twelve acres at this height over the River du Loup, a lease of which for mining purposes was subsequently obtained from the *censitaire*.

The interval of dry weather was also used for the purpose of collecting from the bed of the River and placing on the bank, a quantity of gravel for future washing, and before the expiration of the drought, an attempt was made to construct a wooden dam across the River du Loup, with a view of getting a head of water to work an effective number of streaks and tyes. Before, however, the dam could be finished and secured, a freshet which occurred carried the structure completely away, causing a loss of £125, but towards the end of the season, wet weather once more permitted the creek to yield a temporary supply of water sufficient to wash the gravel which had been

collected, and a small additional quantity not previously moved.

The area worked over during the season, the thickness of the gravel being on the average about two feet, was, by actual measurement, found to be about three-eighths of an acre, and the quantity of gold collected from this (including a small portion derived from the general exploration) was 1947 dwts. 11 grs. among which were several pieces weighing from 1 to $1\frac{1}{4}$ oz.; and besides this, there was a quantity of iron sand (about a ton) resulting from the last process in washing the gravel, which by experiment was found to contain about 160 dwts. of gold.

On comparing the value of the gold thus obtained with the wages expended in collecting it, (exclusive, however, of all charges for superintendence), the result is as follows:—

	Dwts. grs.
Clean gold obtained.....	1947 11
Gold in one ton of iron sand	160 0
	2107 11 a £43 12 4
Amount expended for labor in mining, washing and cleaning from 25th April to 8th November	1 8
Leaving a balance of.....	1 0

In the wages, however, is included the expense of erecting the dam carried away, and as this accident had nothing to do with the facts required to elucidate the general probable returns of the mineral location, the value of the Gold over the wages may be considered as approaching £170, or about 70 per cent.

In 1852, mining operations were resumed in the end of May, and warned by the early drying up of the water in the creek the previous season, it was deemed prudent, while one party was occupied in streaming by aid of the creek, to employ another in constructing across the River du Loup a break-water or dam of stones, brush and turf, with a view of raising and having ready such a head of water, as would keep streaks and ties going when the creek should fail. From the commencement, however, the creek gave but a poor supply, and after expending a good deal of labor on the dam it proved to be unserviceable, as while the interstices among the stones

used for a foundation on an uneven bottom were such as could not be stopped, they were found to be sufficient to permit the escape of all the water. The dam, therefore, had to be abandoned without any remuneration resulting from it.

This expedient failing, it was conceived that a continued supply of water for regular work might be obtained by procuring it at a distance of about 900 feet up the River, and conducting it in launders to join the creek, which by this time was nearly dry, but still gave a small amount that by saving, was made available at intervals. Launders with a breadth of ten inches were consequently constructed, but by the time they were placed, the water in the River had fallen so much that it was found necessary to construct a head-way still a little farther up, to get the water into them with a sufficient current to carry it the whole distance.

While the launders were in the course of construction and adjustment, which occupied nearly six weeks, and the dry weather continued, a party was employed to raise gravel from the bed of the River and place it on the bank for future use. This was a judicious precaution; for though the gravel on the banks may hold nearly as much gold, yet it is proper to clean up the River first, as the working of the bank gravel must necessarily send the refuse resulting from it into the River, where it would obstruct the attainment of the River gravel, were not this washed first. The River gravel is only attainable during the dry weather, and it might have been again covered by the water, by the time the launders were completed; yet if the launders had been ready, this gravel might have been at once carried to the streaks and tyes, and one movement of it could thus have been saved.

The launders came into operation in the end of July, and though it was found they had scarcely enough fall to give at all times the quantity of water required, yet from that period to the termination of the season, concluding in the end of October, the work became pretty regular.

The area worked over during the season was, about five-eighths of an acre. The quantity of gold obtained was 2573 dwts. 7 grs., in which were included the following nuggets:—

	dwts.	grs.
June 7.....	126	19
July 30.....	83	21
August 25.....	10	20
“ “.....	38	21
September 7.....	98	21
“ 24.....	55	2
“ 30.....	23	20
October 2.....	16	22
“ 9.....	13	2

In addition to this, was the gold contained in the iron sand resulting from the copper bottoms in the last process of cleaning. This, however, was mixed up with that of the previous season, and the average of the two, tried by a sample of 25 lbs., is equal to 233 dwts. 18 grs. of gold per ton of sand. The quantity of this iron sand now on hand is about two tons, and deducting from the gold in it, 160 dwts. for the ton of 1851, there would remain 307 dwts. 12 grs. as the quantity in the ton of 1852.

Comparing as before, the value of the gold and the labor, exclusive of superintendence, the result is as follows :—

	dwts.	grs.
Clean gold collected.....	2573	7
Gold in one ton of iron sand.....	307	12
	2880	19 a 4s 4d—£624 3 5
Amount expended for labor from the 24th May to 30th October.....	472	1 9
Leaving a balance of.....	£152	1 8

In the labor is included the time expended in making the launders; but as these might be serviceable for several years, in justice to the experiment, the expense of making them should be distributed over these years, and it is therefore considered that an allowance of 2s. 6d. for each of them should be made. The number of them including those required for streaks and ties is 150, and the value of the gold over the wages would thus be about £170 or about 38 per cent.

If, however, a comparison is made between the gold and the wages, from the time the launders came into operation until

the end of the season, the result would be as follows :—

	dwts.
Clean gold collected.....	2036
Gold in proportion of iron sand.....	242
	2278 a 4s 4d—£493 11 4
Amount expended for labor from the week end- }	
ing 31st July to the 30th October..... }	282 12 9
Leaving.....	£210 18 7

From this, however, is to be deducted an allowance for the superior facility with which the gravel collected, while the launders were making, could be taken from the bank instead of from the River; this gravel gave about two weeks work to the streaks and tyes, and the difference is about one-third or 60 days, that is £9, making the value of the gold over wages about £200, or about 70 per cent.

From the exploration and experiments that have thus been made on the location, it appears quite evident that it must contain a large quantity of gold. The superficial area of ground is about 2,000 acres, and from one of these acres there has already been obtained upwards of £1,000 worth of metal. But it is also evident that to work the location effectually, operations must be carried on, on a much larger scale. This would require some outlay. The only natural difficulties in the way are those connected with a supply of water. The supply by the present launders is insufficient; their breadth is too small, and while their fall is scarcely great enough, the height they gain above the River, is not sufficient to carry them above the reach of freshets; so that while they stand in some danger of being injured by such freshets as may occur during the working season, they must be removed whenever the winter sets in, and replaced in the spring. The slope of the River is much quicker above the present launders, and a quantity of water large enough to work any required number of streaks and tyes, would be procured by conveying it along side of the River du Loup, from the highest point to which the location extends on this stream, by launders of six feet wide. The distance is about a mile, and the fall is sufficient to permit the launders to be carried for the chief part above the level of freshets.

Such an arrangement would command the whole bed of the River, and nearly emptying it during dry weather, would give the opportunity of operating on the gravel at so many points at once, as would rapidly exhaust of their gold the bed (averaging 20 yards), the banks and flats in the whole distance down to the Chaudière, at the junction with which there is a wider flat than elsewhere, the produce of which it is expected will considerably surpass the average of the ground in other parts.

The Chaudière is fully double the width of the du Loup, and at the highest part of the location and within it on that stream there is a considerable cascade, called the Upper Falls of the Chaudière, from which any supply of water might be obtained for operations on the banks, either at the same time or subsequently to washing on the du Loup.

I am, Sir,

Your most obedient servant,

(Signed,)

RICHARD OATEY.

APPENDIX.

COPY OF MINING REGULATIONS FOR GRANTS OF MINING PRIVILEGES.

1st. The grant to be a lease for a period of seven years, renewable at the option of the locatee, on payment, for the first seven years, of one-twentieth of the mineral obtained and put into saleable condition.

2nd. That the lessees do settle with the proprietors of conceded lands or the Seigniors for any claims to which such operations may give rise.

3rd. That previous to a grant being made, the requisite exploration be completed, and a regular plan of the locality be furnished to the Government.

4th. To enable the lessees to put the mining location in a working state, a remission of the Seigniorage will be allowed for the first year, from the day of his lease.

5th. That the grant do not extend over a greater distance than five miles on a stream, by a quarter of a mile on each side thereof.

6th. That the locatee be bound to employ daily on the location, at all such times as are free from frosts or freshets, three able bodied men to a mile, or fifteen men to a five mile location—the default of compliance with this condition to be visited with forfeiture of lease.

7th. The locatee to be bound to enter regularly on a map the portion of the ground worked and exhausted by him, to furnish a copy of the same when required, and an account annually to Government of the quantity of metal due for Seigniorage—the Government having the option to take the said Seigniorage or rent in kind, or in value, with the right of inspecting the locatee's books at will. Wilful false returns to be visited with forfeiture of lease, and a fine to the extent of the damage proved.

8th. The locatee to be bound on pain of forfeiture of lease, to keep regular books of the number of persons employed every day during the mining seasons, and of the exact quantity of metal yielded by the location, and to furnish yearly a copy of the same, certified under oath, to be a correct account of the labor given on the location and of the metal in a saleable condition extracted therefrom.

9th. The Seigniorage or per centage, in case the lands over which the grant may extend be unconceded Crown lands, to be one-fifteenth of the metal extracted.

10th. The accounts to be furnished to the Crown Lands Department and the Seigniorage or dues to be delivered and paid at such places as may be determined upon by the Honorable Commissioner of Crown Lands.

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